REMARKS

Initially, Applicants respectfully acknowledge that the Examiner has indicated that claims 5, and 19-22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office Action and to include all the limitations of the base claim and any intervening claims, and claim 13, which is objected to as being dependent upon a rejected base claim, would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Further, Applicants respectfully note that claim 23, which depends from allowable claim 19, should also have been indicated as allowable.

Claims 1-23 remain pending in the application.

Reconsideration of the rejections and allowance of the pending application in view of the foregoing amendments and following remarks are respectfully requested.

In the Office Action claims 4-11 and 17-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this regard the Examiner has asserted "In claims 4 and 17-18, "antiphase manner" is vague and indefinite. The manner of coil excitation is not clear from this phrase. In claim 8, the language "overlap each other in three dimensions when viewed in the axial direction" is indefinite, confusing language, because only two dimensions are seen "when viewed in the axial direction" and therefore it is not clear how "three dimensional" overlap occurs. In claim 11, the claim language is convoluted and indefinite. The "other end faces of the

magnets opposite to the contacting opposed end faces" lacks antecedent basis. The term "flush" is not understood because the magnet axis is radially distant the cylindrical surface on which the stationary elements are formed. In claims 19 and 21, "undergoing...the force" is vague and indefinite." This rejection is respectfully traversed.

In response, with regard to the rejection of claims 4, 17 and 18, Applicants has amended each of claims 4, 17 and 18 to change "antiphase manner" to - - antiphase excitation mode- -. In this regard Applicants respectfully submit that "antiphase excitation mode" is now clear and definite as also used in the same manner as in column 2, lines 35 and 40, of U.S. Patent No. 4,739,336 attached herewith.

Applicants has also amended claim 8 to remove the phrase "in three dimensions", amended claim 11 to change "but the other" to - - , but other - - on line 6 and to insert - - axially - - before "flush" on line 8, amended claims 19 and 20 to change "undergoing from the first stationary member the force oriented in the axial direction" to - - undergoing the force oriented in the axial direction from the first stationary member - -, and amended claims 21 and 22 to change "undergoing from the second stationary member the force oriented in the rotational direction" to - - undergoing the force oriented in the radial direction from the second stationary member - -. Thus, Applicants submit that the above-noted amendments obviate the Examiner's objections and render the rejections under 35 U.S.C. 112, second paragraph, moot.

In the Office Action, claims 1-4 and 6-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Motohashi et al., (WO 2004/047670, hereinafter "Motohashi") This

rejection is respectfully traversed.

Applicants respectfully submit that Motohashi is not a proper reference for the rejection because such a rejection under 35 U.S.C. §102(e) cannot properly be based upon a PCT publication, only upon a publication of a U.S. application. Applicants further note, as acknowledged by the Examiner, that Motohashi is commonly assigned with the present application, and lists at least some common inventors, and also note that the 102(e) date of the reference is November 20, 2003 which is antedated by the priority date of the present application, November 26, 2002. In this regard, Applicants herewith submit verified English language translations of the Japanese priority documents of the present application (i.e., Japanese Application No. 2002-342760 filed on November 26, 2002, and Japanese Application No. 2002-342761 filed on November 26, 2002). Accordingly, Applicants have complied with the provisions of 35 U.S.C. 119(b), the claim of priority having been filed in the present application on January 3, 2005, the certified copies having been submitted by the International Bureau and acknowledged by the Examiner. Thus the rejection of claims 1-4 and 6-12 under 35 U.S.C. 102(e) is improper, and withdrawal thereof is respectfully requested.

In the Office Action, claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by NiKaido (U.S. Patent No. 4,099,106), and claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Chun et al., (U.S. Patent Publication No. 2001/040316, hereinafter "Chun"). These rejections are respectfully traversed.

Independent claim 1 has been amended to more clearly define a structural feature of an embodiment and to more clearly distinguish over the applied prior art references by further reciting that the first stationary member includes a pair of first stationary elements provided symmetrically with respect to the rotational axis and the second stationary member includes a pair of second stationary elements provided symmetrically with respect to the rotational axis. No new matter is believed to be introduced by the present amendment. In this regard, the Examiner's attention is directed to, inter alia, original claim 4 of Applicants' application.

It is a feature of a disclosed embodiment to provide an actuator in which a movable member can be moved in two directions, an axial direction and a rotational direction, without using a motion direction converting mechanism to upgrade the degree of freedom of operational control of the movable member.

To achieve the above-noted feature, the actuator of a disclosed embodiment, as recited in amended claim 1, includes, inter alia, a casing, a stationary member which has a coil member and is mounted in the casing, and a movable member which includes a moving element and is supported by the casing. The moving element has a shaft and is supported by the casing so as to be moved in an axial direction of the shaft and in a rotational direction having the axial direction of the shaft as its rotational axis, electric current is caused to flow through the coil member such that the moving element is moved in the axial direction and in the rotational direction, the stationary member includes a first stationary member that imparts to the movable member a force oriented

in the axial direction and a second stationary member that imparts to the movable member a force oriented in the rotational direction, the first stationary member includes a pair of first stationary elements provided symmetrically with respect to the rotational axis and the second stationary member includes a pair of second stationary elements provided symmetrically with respect to the rotational axis; and the coil member includes a first coil member that excites a first magnetic path passing through the first stationary member and a second coil member that excites a second magnetic path passing through the second stationary member.

Applicants respectfully submits that the references relied upon in the rejections under 35U.S.C. 102(b) do not disclose such a combination of features.

Although the Nikaido reference appears to disclose a first coil 26/32 for creating a magnetic path in a first stationary member to impart axial direction force to movable member 1, and a second coil 14/20 for creating a magnetic path in a second stationary member to impart rotational direction force to movable member 1, the Nikaido does not teach the first stationary member includig a pair of first stationary elements provided symmetrically with respect to the rotational axis and the second stationary member including a pair of second stationary elements provided symmetrically with respect to the rotational axis, as recited in claim 1.

Also, although the Chun reference appears to disclose a first coil 12 for creating a magnetic path in a first stationary member to impart axial direction force to movable member 20 (linear movement zone), and a second coil 13 for creating a magnetic path

in a second stationary member to impart rotational direction force to movable member 20 (rotation movement zone), the Chun reference does not disclose the first stationary member including a pair of first stationary elements provided symmetrically with respect to the rotational axis and the second stationary member including a pair of second stationary elements provided symmetrically with respect to the rotational axis, as recited in claim 1, either.

In contrast, however, in the present embodiment recited in claim 1, as noted above, the first stationary member 2 includes a pair of first stationary elements (each with a first coil 3) provided symmetrically with respect to the rotational axis and the second stationary member 4 includes a pair of second stationary elements (each with a second coil 5) provided symmetrically with respect to the rotational axis. The combination including these features is taught by neither Nikaido nor Chun.

In the rejection of claim 4 based on the Chun reference, although the Examiner has indicated that the coils 12 and 14 of respective first and second stationary members are symmetric with respect to the axis of rotation (Fig. 4a), the Examiner has not addressed the above-noted features of the presently claimed embodiment.

Thus, neither Nikaido nor Chun anticipates the presently claimed embodiment recited in claim 1.

Claims 12 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nikaido or Chun in view of Ichii et al., (JP 2002-199689, hereinafter "Ichii"). This rejection is also respectfully traversed.

Claims 12 and 14 have been amended to be rewritten in independent form.

The Examiner has asserted that it would have been obvious to modify either Nikado or Chun to provide axial resonant springs per Ichii to oscillate the moving element.

Applicants respectfully submit that it would not have been obvious to one having ordinary skill in the art to combine the teachings of Ichii with the systems of the primary reference, Nikaido or Chun, as described by the Examiner. In this regard, Applicants submits that the system of Ichii is not analogous to either of the primary references, because Ichii is directed to a small-sized linear oscillator in low vibration and low noise while Nikaido is specifically concerned with a pulse motor capable of producing both rotational and transverse movement and Chun is specifically concerned with a linear motor having a plurality of permanent magnets assembled with a shaft which is moved rotatably and linearly. Therefore Applicants respectfully submits that the modification suggested by the Examiner would have destroyed the teachings of the primary references themselves, and that such modification is clearly the result of impermissible hindsight reasoning. Thus, the asserted combination of the applied references would not result in the invention as recited in amended independent claims 12 and 14.

Claim 13 which has been indicated as including allowable subject matter has been written in independent form.

Independent claims 1, 12, 13 and 14 are now in condition for allowance in view of the amendments and the above-noted remarks, and claims 2-11, and 15-23 dependent thereon, respectively, are also submitted to be in condition for allowance in

view of their dependence from the allowable base claims and also at least based upon their recitations of additional features of the present invention. It is respectfully requested, therefore, that the rejections under 35 U.S.C. 102(b), 35 U.S.C. 102(e), 35 U.S.C. 103(a) and the second paragraph of 35 U.S.C. 112 be withdrawn and that an early indication of the allowance thereof be given.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based on prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to be attached thereto.

Based on the above, it is respectfully submitted that this application is now in condition for allowance, and a Notice of Allowance is respectfully requested.

Should the Examiner have any questions or comments regarding this response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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Attachment : U.S. Patent No. 4,739,336 (Partials)
English language translations of Japanese Application No. 2002-342760 and Japanese Application No. 2002-342761

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